

SAFETY DATA SHEETS

This SDS packet was issued with item:

076387393

N/A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Orotol® plus Disinfection of suction systems

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

Orotol® plus is a highly effective aldehyde-free concentrate for the simultaneous disinfection, deodorization, cleaning and care of dental suction systems as well as spittoon bowls, being likewise suitable for all amalgam separators.

Product Categories [PC]

PCO - Other
Disinfectants

Uses advised against

None, if handled according to order.

Remark

The product is intended for professional use.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

orochemie GmbH + Co. KG

Street : Max-Planck-Straße 27

Postal code/city : 70806 Kornwestheim

Telephone : +49 7154 1308-0

Telefax : +49 7154 1308-40

Information contact : DÜRR DENTAL SE, Höpfigheimer Str. 17, 74321 Bietigheim-Bissingen, Germany

Tel: +49 7142 705-0, Fax: +49 7142 705-500, info@duerrdental.com

in Great Britain/Ireland:

DÜRR DENTAL [Products] UK Ltd., 14 Linnell Way - Telford Way Industrial Estate, Kettering Northants NN16 8PS, United Kingdom

Tel: +44 1536 526740, Fax.: +44 1536 526749, info@duerruk.com

1.4 Emergency telephone number

INT: +49 6132 84463 (24 h/7 d)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

Aquatic Chronic 3 ; H412 - Hazardous to the aquatic environment : Chronic 3 ; Harmful to aquatic life with long lasting effects.

Eye Dam. 1 ; H318 - Serious eye damage/eye irritation : Category 1 ; Causes serious eye damage.

Skin Corr. 1C ; H314 - Skin corrosion/irritation : Category 1C ; Causes severe skin burns and eye damage.

Met. Corr. 1 ; H290 - Corrosive to metals : Category 1 ; May be corrosive to metals.

Classification procedure

The classification was carried out according to the calculation method of Regulation No. (EC) 1272/2008 [CLP] as well as in-house investigations.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)



Corrosion (GHS05)

Signal word

Danger

Hazard components for labelling

DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3

POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3

Hazard statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves and eye/face protection.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P353 Rinse skin with water/shower.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container to hazardous or special waste collection point.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description

Orotol® plus contains quaternary ammonium compounds, alkaline cleaning agents, complexing agents, special antifoaming agents, fragrances and auxiliary agents in aqueous solution.

Hazardous ingredients

TETRAPOTASSIUM DIPHOSPHATE ; REACH registration No. : 01-2119489369-18 ; EC No. : 230-785-7 ; CAS No. : 7320-34-5

Weight fraction : $\geq 3 - < 8 \%$

Classification 1272/2008 [CLP] : Eye Irrit. 2 ; H319

DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; REACH registration No. : - ; EC No. : 226-901-0 ; CAS No. : 5538-94-3

Weight fraction : $\geq 3 - < 5 \%$

Classification 1272/2008 [CLP] : Flam. Liq. 3 ; H226 Skin Corr. 1B ; H314 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Aquatic Acute 1 ; H400

SODIUM ETHYLENEDIAMINETETRAACETATE ; REACH registration No. : 01-2119486762-27 ; EC No. : 200-573-9 ; CAS No. : 64-02-8

Weight fraction : $\geq 3 - < 5 \%$

Classification 1272/2008 [CLP] : STOT RE 2 ; H373 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Acute Tox. 4 ; H332

DODECYLDIMETHYLBENZYLAMMONIUM CHLORIDE ; REACH registration No. : - ; EC No. : 287-089-1 ; CAS No. : 85409-22-9

Weight fraction : $\geq 0,5 - < 1 \%$

Classification 1272/2008 [CLP] : Skin Corr. 1B ; H314 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Aquatic Acute 1 ; H400

POTASSIUM HYDROXIDE ; REACH registration No. : 01-2119487136-33 ; EC No. : 215-181-3 ; CAS No. : 1310-58-3

Weight fraction : $\geq 0,3 - < 0,7 \%$

Classification 1272/2008 [CLP] : Met. Corr. 1 ; H290 Skin Corr. 1A ; H314 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302

TRISODIUM NITRILOTRIACETATE ; REACH registration No. : 01-2119519239-36 ; EC No. : 225-768-6 ; CAS No. : 5064-31-3

Weight fraction : $< 0,5 \%$

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Classification 1272/2008 [CLP] : Carc. 2 ; H351 Acute Tox. 4 ; H302 Eye Irrit. 2 ; H319
EUCALYPTOL ; REACH registration No. : 01-2119967772-24 ; EC No. : 207-431-5; CAS No. : 470-82-6
Weight fraction : < 0,05 %
Classification 1272/2008 [CLP] : Flam. Liq. 3 ; H226 Skin Sens. 1 ; H317

Additional information

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove contaminated, saturated clothing immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of skin contact

Wash with plenty of water. When in doubt or if symptoms are observed, get medical advice.

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

If swallowed, immediately drink: Water Never give anything by mouth to an unconscious person or a person with cramps. Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2) Extinguishing powder Water spray Water mist The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

None known.

Hazardous combustion products

None known.

5.3 Advice for firefighters

Adapt protective equipment to surrounding fire.

Special protective equipment for firefighters

Adapt protective equipment to surrounding fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protection equipment. See protective measures under point 7 and 8.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

For non-emergency personnel

Use personal protection equipment. See protective measures under point 7 and 8.

For emergency responders

Personal protection equipment

See protective measures under point 7 and 8.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

Other information

Treat the recovered material as prescribed in the section on waste disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep/Store only in original container. Please note safety instructions and directions for use on the drum. Handle and open container with care. Provide adequate ventilation. Do not breathe vapour/aerosol.

Protective measures

Measures to prevent fire

Usual measures for fire prevention. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep/Store only in original container. Keep container tightly closed. Keep in a cool, well-ventilated place. Do not store in temperatures below 5 °C.

Hints on joint storage

Store the foodstuffs separately.

7.3 Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3

Limit value type (country of origin) : TLV/STEL (GB)

Limit value : 2 mg/m³

DNEL / DMEL and PNEC values

There are no data available on the preparation itself.

DNEL / DMEL

Limit value type : DNEL Consumer (systemic) (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)

Exposure route : Inhalation

Exposure frequency : Long-term (repeated)

Limit value : 0,68 mg/l

Limit value type : DNEL Consumer (systemic) (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)

Exposure route : Oral

Exposure frequency : Long-term (repeated)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Limit value :	> 70 mg/kg
Safety factor :	24 h
Limit value type :	DNEL Consumer (systemic) (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	10,87 mg/m ³
Limit value type :	DNEL worker (systemic) (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	2,79 mg/m ³
Limit value type :	DNEL worker (systemic) (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	44,08 mg/m ³
Limit value type :	DNEL/DMEL (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Exposure route :	Oral
Exposure frequency :	Long-term (repeated)
Limit value :	7,5 mg/kg
Safety factor :	24 h
Limit value type :	DNEL/DMEL (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Exposure route :	Dermal
Limit value :	7,5 mg/kg
Safety factor :	24 h
Limit value type :	DNEL/DMEL (Industrial) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	44 mg/m ³
Limit value type :	DNEL/DMEL (Industrial) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	12,5 mg/kg
Safety factor :	24 h
Limit value type :	DNEL Consumer (local) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	1,5 mg/m ³
Limit value type :	DNEL Consumer (local) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	1,5 mg/m ³
Limit value type :	DNEL Consumer (systemic) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	1,5 mg/m ³
Limit value type :	DNEL Consumer (systemic) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	1,5 mg/m ³
Limit value type :	DNEL Consumer (systemic) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

	64-02-8)
Exposure route :	Oral
Exposure frequency :	Long-term (repeated)
Limit value :	25 mg/kg
Safety factor :	24 h
Limit value type :	DNEL worker (local) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	2,5 mg/m ³
Limit value type :	DNEL worker (local) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	2,5 mg/m ³
Limit value type :	DNEL worker (systemic) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	2,5 mg/m ³
Limit value type :	DNEL worker (systemic) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	2,5 mg/m ³
Limit value type :	DNEL Consumer (local) (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	1 mg/m ³
Limit value type :	DNEL worker (local) (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	1 mg/m ³
Limit value type :	DNEL Consumer (local) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	1,75 mg/m ³
Limit value type :	DNEL Consumer (systemic) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	1,75 mg/m ³
Limit value type :	DNEL Consumer (systemic) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Oral
Exposure frequency :	Long-term (repeated)
Limit value :	0,5 mg/kg
Safety factor :	24 h
Limit value type :	DNEL worker (local) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	5,25 mg/m ³
Limit value type :	DNEL worker (local) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	3,5 mg/m ³
Limit value type :	DNEL worker (systemic) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Inhalation

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
 Revision : 02.01.2018
 Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Exposure frequency : Short-term (acute)
 Limit value : 5,25 mg/m³
 Limit value type : DNEL worker (systemic) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
 Exposure route : Inhalation
 Exposure frequency : Long-term (repeated)
 Limit value : 3,5 mg/m³

PNEC

Limit value type : PNEC aquatic, freshwater (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
 Limit value : 0,05 mg/l
 Limit value type : PNEC aquatic, intermittent release (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
 Limit value : 0,5 mg/l
 Limit value type : PNEC aquatic, marine water (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
 Limit value : 0,005 mg/l
 Limit value type : PNEC sewage treatment plant (STP) (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
 Limit value : 50 mg/l
 Limit value type : PNEC (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
 Exposure route : Water (Including sewage plant)
 Limit value : 0,0135 mg/l
 Limit value type : PNEC (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
 Exposure route : Water (Including sewage plant)
 Limit value : 0,0014 mg/l
 Limit value type : PNEC (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
 Exposure route : Water (Including sewage plant)
 Limit value : 1 mg/kg
 Limit value type : PNEC (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
 Exposure route : Water (Including sewage plant)
 Limit value : 0,1 mg/kg
 Limit value type : PNEC (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
 Exposure route : Water (Including sewage plant)
 Limit value : 3000 mg/kg
 Limit value type : PNEC (Consumer) (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
 Exposure route : Soil
 Limit value : 0,8 mg/kg
 Limit value type : PNEC aquatic, freshwater (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
 Exposure route : Water (Including sewage plant)
 Limit value : 2,8 mg/l
 Limit value type : PNEC aquatic, intermittent release (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
 Limit value : 1,6 mg/l
 Limit value type : PNEC aquatic, marine water (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
 Exposure route : Water (Including sewage plant)
 Limit value : 0,28 mg/l
 Limit value type : PNEC (Industrial) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
 Exposure route : Soil
 Limit value : 0,95 mg/kg
 Limit value type : PNEC sewage treatment plant (STP) (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Exposure route :	Water (Including sewage plant)
Limit value :	57 mg/l
Limit value type :	PNEC aquatic, freshwater (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Water (Including sewage plant)
Limit value :	0,93 mg/l
Limit value type :	PNEC aquatic, marine water (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Water (Including sewage plant)
Limit value :	0,093 mg/l
Limit value type :	PNEC sediment, freshwater (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Soil
Limit value :	3,64 mg/kg
Limit value type :	PNEC sediment, marine water (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Soil
Limit value :	0,364 mg/kg
Limit value type :	PNEC soil, freshwater (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Soil
Limit value :	0,182 mg/kg
Limit value type :	PNEC Secondary Poisoning (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Limit value :	0,2 mg/kg
Limit value type :	PNEC sewage treatment plant (STP) (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route :	Water (Including sewage plant)
Limit value :	540 mg/l

8.2 Exposure controls

Personal protection equipment

Eye / face protection

Eye glasses with side protection DIN EN 166

Skin protection

Hand protection

Short-term exposure (Level 2: < 30 min): disposable gloves to EN374 category III, e.g. nitrile rubber, material thickness 0.1 mm.

Long-term exposure (Level 6: < 480 min): protective gloves to EN374 category III, e.g. nitrile rubber, material thickness 0.7 mm.

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

Body protection

Body protection: not required.

Respiratory protection

Usually no personal respiratory protection necessary.

General health and safety measures

Keep away from food, drink and animal feedingstuffs. Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing. Wash hands before breaks and after work. Separate storage of work clothes. When using do not eat, drink, smoke, sniff.

Occupational exposure controls

Technical measures to prevent exposure

Provide adequate ventilation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Colour : yellow

Odour : Lemon

Safety relevant basis data

Melting point / melting range :	(1013 hPa)		No data available	
Initial boiling point and boiling range :	(1013 hPa)	approx.	100	°C
Decomposition temperature :	(1013 hPa)		No data available	
Flash point :			not applicable	
Ignition temperature :			not applicable	
Lower explosion limit :			not applicable	
Upper explosion limit :			not applicable	
Vapour pressure :	(50 °C)		No data available	
Density :	(20 °C)		1,07 - 1,11	g/cm ³
Solvent separation test :	(20 °C)	<	3	%
Water solubility :	(20 °C)		100	Wt %
pH value :			12 - 13	
pH :	(20 °C / 20 g/l)		10 - 10,5	
log P O/W :			No data available	
Flow time :	(20 °C)	<	12	s
Odour threshold :			No data available	
Maximum VOC content (EC) :			6,6	Wt %
Oxidising liquids :	Not applicable.			
Explosive properties :	Not applicable.			
Corrosive to metals :	May be corrosive to metals (H290).			
Flow time :	(20 °C)	<	12	s
				DIN-cup 4 mm

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

None, if handled according to order.

10.2 Chemical stability

Stable under recommended storage and handling conditions (see section 7). Reactions with acids: development of heat.

10.3 Possibility of hazardous reactions

Reactions with acids possible

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

Acid

10.6 Hazardous decomposition products

None known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity

Parameter :	LD50
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2000 mg/kg
Method :	OECD 401
Parameter :	ATEmix calculated

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Exposure route : Oral
Effective dose : 15151 mg/kg
Parameter : ATE (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route : Oral
Effective dose : 500 mg/kg
Parameter : ATE (DODECYLDIMETHYLBENZYLAMMONIUM CHLORIDE ; CAS No. : 85409-22-9)
Exposure route : Oral
Effective dose : 500 mg/kg
Parameter : ATE (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route : Oral
Effective dose : 500 mg/kg
Parameter : ATE (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route : Oral
Effective dose : 500 mg/kg

Practical experience/human evidence

Causes severe skin burns and eye damage.

Acute dermal toxicity

Parameter : LD50
Exposure route : Dermal
Species : Rat
Effective dose : > 2000 mg/kg
Method : OECD 402
Parameter : ATEmix calculated
Exposure route : Dermal
Effective dose : not relevant

Acute inhalation toxicity

Parameter : ATEmix calculated
Exposure route : Inhalative (vapour)
Effective dose : 333,3 mg/l
Parameter : LC50 (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
Exposure route : Inhalation
Species : Rat
Effective dose : > 1,1 mg/l
Method : OECD 403
Parameter : LC50 (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Exposure route : Inhalation
Species : Rat
Effective dose : 1000 - 5000 mg/l
Exposure time : 6 h
Parameter : LC50 (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route : Inhalation
Species : Rat
Effective dose : > 5 mg/l
Exposure time : 4 h
Parameter : LC50 (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Exposure route : Inhalation
Species : Rat
Effective dose : > 4,25 mg/l
Exposure time : 4 h
Method : OECD 403

Irritant and corrosive effects

Rabbit's eye: no irritation. 2 % solution. Method : OECD 405.

Sensitisation

Guinea-pig: non-sensitizing (2 % solution). Method : OECD 406.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

No information available.

11.5 Additional information

The classification was carried out according to the calculation method of Regulation No. (EC) 1272/2008 [CLP] as well as in-house investigations.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter :	LC50 (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
Species :	Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	> 100 mg/l
Exposure time :	96 h
Method :	OECD 203
Parameter :	LC50 (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Species :	Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	0,35 mg/l
Exposure time :	96 h
Parameter :	LC50 (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Species :	Lepomis macrochirus (Bluegill)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	0,55 mg/l
Exposure time :	48 h
Parameter :	LC50 (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Species :	Fish
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	0,1 - 1 mg/l
Exposure time :	96 h
Parameter :	LC50 (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Species :	Lepomis macrochirus (Bluegill)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	951 mg/l
Exposure time :	96 h
Parameter :	LC50 (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Species :	Leuciscus idus (golden orfe)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	2040 mg/l
Exposure time :	96 h
Parameter :	LC50 (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Species :	Fish
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	> 100 mg/l
Exposure time :	96 h
Parameter :	LC50 (DODECYLDIMETHYLBENZYLAMMONIUM CHLORIDE ; CAS No. : 85409-22-9)
Species :	Pimephales promelas (fathead minnow)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	0,28 mg/l
Exposure time :	96 h
Parameter :	LC50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Species :	Gambusia affinis (Mosquito fish)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	80 mg/l

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Exposure time : 96 h
Parameter : LC50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Species : Poecilia reticulata (Guppy)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 165 mg/l
Exposure time : 24 h
Parameter : LC50 (TRISODIUM NITRILOTRIACETATE ; CAS No. : 5064-31-3)
Species : Pimephales promelas (fathead minnow)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : > 100 mg/l
Exposure time : 96 h
Parameter : LC50 (EUCALYPTOL ; CAS No. : 470-82-6)
Species : Pimephales promelas (fathead minnow)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 102 mg/l
Exposure time : 96 h

Chronic (long-term) fish toxicity

Parameter : NOEC
Species : Poecilia reticulata (Guppy)
Evaluation parameter : Chronic (long-term) fish toxicity
Effective dose : 1,1 mg/l
Exposure time : 96 h
Method : OECD 203

Acute (short-term) daphnia toxicity

Parameter : EC50
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 1,1 mg/l
Exposure time : 48 h
Method : OECD 202

Chronic (long-term) daphnia toxicity

Parameter : NOEC
Species : Daphnia magna (Big water flea)
Evaluation parameter : Chronic (long-term) daphnia toxicity
Effective dose : 0,26 mg/l
Exposure time : 48 h
Method : OECD 202

Acute (short-term) algae toxicity

Parameter : ErC50
Species : Desmodesmus subspicatus
Evaluation parameter : Inhibition of growth rate
Effective dose : 4,42 mg/l
Exposure time : 72 h
Method : OECD 201

Chronic (long-term) algae toxicity

Parameter : NOEC
Species : Desmodesmus subspicatus
Evaluation parameter : Chronic (long-term) algae toxicity
Effective dose : 1,25 mg/l
Exposure time : 96 h
Method : OECD 201

Bacteria toxicity

Parameter : EC50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Evaluation parameter : Bacteria toxicity
Effective dose : 22 mg/l

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Exposure time : 0,25 h
Parameter : EC50 (OXYDIPROPANOL ; CAS No. : 25265-71-8)
Species : Pseudomonas putida
Evaluation parameter : Bacteria toxicity
Effective dose : > 100000 mg/l
Exposure time : 16 h
Parameter : EC50 (DODECYLDIMETHYLBENZYLAMMONIUM CHLORIDE ; CAS No. : 85409-22-9)
Evaluation parameter : Bacteria toxicity
Effective dose : 7,75
Exposure time : 3 h
Method : OECD 209
Parameter : EC50 (TETRASODIUM DIPHOSPHATE ; CAS No. : 7320-34-5)
Evaluation parameter : Bacteria toxicity
Effective dose : > 1000 mg/l
Exposure time : 3 h
Parameter : EC10 (OXYDIPROPANOL ; CAS No. : 25265-71-8)
Species : Pseudomonas putida
Evaluation parameter : Bacteria toxicity
Effective dose : > 1000 mg/l
Exposure time : 16 h

Sediment toxicity

Toxicity to soil macroorganisms

Acute earthworm toxicity

Parameter : LC50 (SODIUM ETHYLENEDIAMINETETRAACETATE ; CAS No. : 64-02-8)
Species : Acute earthworm toxicity
Effective dose : 156 mg/kg
Exposure time : 336 h
Method : OECD 207

Terrestrial toxicity

Toxicity to birds

Bird reproduction toxicity

Parameter : Bird reproduction toxicity (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Species : Colinus virginianus (bobwhite quail)
Evaluation parameter : Acute and subchronic bird toxicity
Effective dose : 1300 ppm
Exposure time : 192 h
Parameter : Bird reproduction toxicity (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE ; CAS No. : 5538-94-3)
Species : Anas platyrhynchos (maillard duck)
Evaluation parameter : Acute and subchronic bird toxicity
Effective dose : > 2500 ppm
Exposure time : 192 h

Effects in sewage plants

Technically correct releases of minimal concentrations to adapted biological sewage plants, will not disturb the biodegradability of activated sludge.

12.2 Persistence and degradability

Abiotic degradation

No data available.

Biodegradation

The product is easily biodegradable according to OECD criteria. Method : OECD 301 D.

12.3 Bioaccumulative potential

No information available.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

There are no data available on the preparation itself.

Adsorption/Desorption

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

No information available.

12.7 Additional ecotoxicological information

Prevent from flowing into surface water/ground water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

Concentrate/larger quantities: 18 01 06* (disinfectant).

Waste treatment options

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

14.1 UN number

UN 1719

14.2 UN proper shipping name

Land transport (ADR/RID)

CAUSTIC ALKALI LIQUID, N.O.S. (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE · POTASSIUM HYDROXIDE)

Sea transport (IMDG)

CAUSTIC ALKALI LIQUID, N.O.S. (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE · POTASSIUM HYDROXIDE)

Air transport (ICAO-TI / IATA-DGR)

CAUSTIC ALKALI LIQUID, N.O.S. (DIOCTYL-DIMETHYL AMMONIUM CHLORIDE · POTASSIUM HYDROXIDE)

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) : 8

Classification code : C5

Hazard identification number (Kemler

No.) : 80

Tunnel restriction code : E

Special provisions : LQ 5 I · E 1

Hazard label(s) : 8

Sea transport (IMDG)

Class(es) : 8

EmS-No. : F-A / S-B

Special provisions : LQ 5 I · E 1

Hazard label(s) : 8

Air transport (ICAO-TI / IATA-DGR)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

Class(es) : 8 / -
Special provisions : E 1
Hazard label(s) : 8

14.4 Packing group

III

14.5 Environmental hazards

Land transport (ADR/RID) : No
Sea transport (IMDG) : No
Air transport (ICAO-TI / IATA-DGR) : No

14.6 Special precautions for user

None

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Restrictions of occupation

According to directive 94/33/EC, juveniles are only allowed to handle this product as long as all effects of dangerous substances are prevented.

15.2 Chemical safety assessment

For this mixture a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Indication of changes

02. Labelling according to Regulation (EC) No. 1272/2008 [CLP] - Hazard components for labelling · 03. Hazardous ingredients · 14. Transport hazard class(es) - Land transport (ADR/RID) · 14. Transport hazard class(es) - Sea transport (IMDG) · 14. Transport hazard class(es) - Air transport (ICAO-TI / IATA-DGR)

Environmental hazards

16.2 Abbreviations and acronyms

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimates

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CMR = Carcinogen, Mutagen or Reproductive toxicant

CO₂ = Carbon dioxide

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

EC = European Commission

EC50 = Half maximal effective concentration

EN = European Standard (Norm)

EU = European Union

EUH statement = CLP-specific Hazard statement

EWC = European Waste Catalogue

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

H statement = GHS Hazard statement

IATA = International Air Transport Association ICAO-TI = International Civil Aviation Organization-Technical Instructions

IMDG = International Maritime Dangerous Goods

LC50 = Median lethal concentration

LD50 = Median lethal dose

LogPow = Logarithm of the octanol/water partition coefficient

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Orotol® plus Disinfection of suction systems
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 4.0.1 (4.0.0)

MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOEC/NOEL = No observed effect concentration/level
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RMM = Risk Management Measure
RRN = REACH Registration Number
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
SVHC = Substances of Very High Concern
TLV/STEL = Threshold limit value/short-term exposure limit
TLV/TWA = Threshold limit value/time weighted average
UN = United Nations
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

16.3 Key literature references and sources for data

None

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

No information available.

16.5 Relevant H- and EUH-phrases (Number and full text)

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

16.6 Training advice

None

16.7 Additional information

Notice the directions for use on the label.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.